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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/014,365	12/11/2001	Gabel Chong	30320/37784	1141

4743 7590 11/18/2003

MARSHALL, GERSTEIN & BORUN LLP
6300 SEARS TOWER
233 S. WACKER DRIVE
CHICAGO, IL 60606

EXAMINER

WOOD, KEVIN S

ART UNIT	PAPER NUMBER
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2874

DATE MAILED: 11/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/014,365	CHONG ET AL.	
	Examiner	Art Unit	
	Kevin S Wood	2874	

-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-17 and 24-30 is/are allowed.
- 6) ☒ Claim(s) 18-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: See Head

DETAILED ACTION

Response to Amendment

1. This Action is responsive to the Applicant's Amendment filed 25 July 2003. Claim 18 has been amended. Claims 1-30 are pending in the application.
2. Based on the Applicant's Amendment, the objections to the drawings are now withdrawn.

Response to Arguments

3. Applicant's arguments with respect to claims 18-23 have been considered but are moot in view of the new ground(s) of rejection.

Drawings

4. The informal drawings are accepted for examination purposes only, new formal drawings will be required when the application is allowed.
5. The examiner has approved the proposed drawing changes filed on 25 July 2003. Based on these proposed changes, the objections to the drawings have been withdrawn.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 18-21 and 23 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,624,077 to White.

Referring to claim 18, White discloses all the limitations of the claimed invention. White discloses a three-dimensional optical waveguide including: a substrate (400,601) coated with a first cladding layer (401,602), the first cladding layer comprising a three dimensional trench (404,604) having a peripheral boundary including a first end and a second end, the first end of the trench being wider and deeper than the second end of the trench, the trench being disposed entirely within the first cladding layer with a portion of the first cladding disposed between the trench and the first substrate, the trench being partially filled with core material (408,607) so that a height of core material at the first end of the trench is greater than a height of the core material at the second end of the trench, the core material and first cladding layer being covered by a second cladding (401). See Fig. 4A-6 along with their respective portions of the specification. White clearly discloses that one end of the waveguide may be formed deeper and wider than another end, in order to form a tapered waveguide. See col. 3, lines 29-63 and col. 11, lines 3-52.

Referring to claims 19-21, White discloses all the limitations of the claimed invention. White discloses that the waveguide may be coupled directly to an optical fiber with a diameter of 8 micrometers. See col. 11, lines 11-32.

Referring to claim 23, White discloses all the limitations of the claimed invention. White discloses that the waveguide and cladding may be made from doped silica. It is inherent that the waveguide and the core would have different refractive indices. See col. 11, lines 11-32.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,624,077 to White. White discloses all the limitations of the claimed invention, except White does not appear to specifically disclose that the core and claddings are polymers. However, the use of polymers as cores and claddings in the

optical waveguide art is well known. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize polymers for forming the core and claddings since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use. In re Leshin, 125 USPQ 416.

Allowable Subject Matter

11. Claims 1-17 and 24-30 are allowed.
12. The following is a statement of reasons for the indication of allowable subject matter:

Referring to claims 1-17, the prior art does not disclose the combination of all the limitations of the claimed invention in claim 1. Specifically, the prior art does not disclose the step of forming a second trench in the core material with first and second ends in general alignment with the first and second ends of the first trench and with the second end of the second trench being deeper than the first end of the second trench.

Referring to claims 24-30, the prior art does not disclose the combination of all the limitations of the claimed invention in claim 24. Specifically, the prior art does not disclose the steps of reactive ion etching the core material under conditions sufficient to permit reverse RIE lag to occur so as to form trenches with one end deeper than the other.

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin S Wood whose telephone number is (703) 605-5296. The examiner can normally be reached on Monday-Thursday (7am - 5:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney B Bovernick can be reached on (703) 308-4819. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 307-0956.

KSW

A handwritten signature in black ink, appearing to read "Ben Hart". The signature is written in a cursive, flowing style with a large initial "B" and a stylized "H".